

Brush (E. F.)

RUMYS,

IN THE



Intestinal Disorders of Infants

AND



YOUNG CHILDREN.

[E. F. Brush]

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Clinical Reports of Demilt Dispensary

DEPARTMENT FOR DISEASES OF CHILDREN.

BY

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Last summer, my friend, Dr. A. A. Smith, sent to me, with a note of introduction, Dr. E. F. Brush, well known in connection with the manufacture of kumyss, who was desirous of having a trial of this remedy made in the intestinal disorders of infants and young children, and especially those diarrhœas so frequently met with in the summer season, commencing with green passages. Accordingly, he very kindly placed at my disposal as much kumyss as I might require for use in the dispensary. I had not previously had my attention called to its employment in this connection ; but it was with great pleasure that I undertook to test its effects, for I believe it to be the duty of the profession to make use of every agent that is likely to be of even the slightest service in reducing the extensive infant mortality, which presents such a melancholy feature of the summer history of our great cities. During the months of July and August, I employed it in a considerable number of cases of the above description, and I cannot refrain from saying that I was much delighted with the results obtained, for in every instance it acted in the most satisfactory manner in checking the disease and restoring the alimentary tract to its

normal condition. The only objection I can see to its use is the difficulty of getting some children to take it ; but in my experience I have found that usually this is easily overcome when the patient has taken two or three doses, while not infrequently the children drink it with the greatest avidity.

I will now briefly relate four of my cases, which I think will be sufficient to show the effect of the remedy, as the citation of a larger number would only make a tedious repetition :

CASE I.—*July 9th.* John R., aged two years and ten months. Has had non-inflammatory diarrhœa, with numerous and intensely green passages, since July 5. I ordered three bottles of kumyss, which were to be kept on ice, or in as cold a place as possible, and that the child should be given a small quantity of the remedy about every three hours. All other food and medicine were positively prohibited.

13th.—The mother expressed herself as delighted and surprised at the action of the kumyss. It at once had a beneficial effect upon the frequency and character of the discharge, and by the time the second bottle had been used, there was no diarrhœa whatever. The third bottle was given by way of precaution, however, and to-day the child is apparently perfectly well. In this case the mother stated that she found it pretty hard to get him to take it.

16th.—The child still continues to do well in every respect, and there has been no return of the diarrhœa since the kumyss has been stopped.

CASE II.—*July 13th.*—Thomas M., aged one year and nine months. Acute indigestion, with diarrhœa. Passages very watery, but not green in color. Ordered

an emulsion of castor-oil, with a little paregoric and oil of anise.

20th.—The child was not brought back until to-day, although the medicine had but little effect upon the disease, which now seems to have run into entero-colitis. Ordered powders of subnitrate of bismuth, bicarbonate of sodium, and Dover's powder.

23rd.—The bowels worse than ever, and the passages very green. The child had not been able to retain the powders prescribed. Ordered kumyss, as in the last case, together with the suspension of all other food and medicine.

27th.—The mother states that the remedy at once had a favorable effect upon the passages. They were not nearly so frequent as before, and the green color immediately disappeared. On the 25th, the child was taken on one of the excursions of the St. John's Guild floating hospital, and since then he has had no fever, and has improved in every way. The kumyss gave out a day or two ago, but the passages have continued to be of a natural color. Although the bowels are still somewhat loose, the mother says they are not moved one-tenth as often as before the kumyss was taken. Ordered the remedy to be resumed, without other food or medicine.

August 3rd.—As soon as the child commenced taking the kumyss again, the diarrhœa disappeared, and there has been no return of it since. He has markedly improved in every way, and looks fifty per cent. better than before.

CASE III.—*July 18th.*—Ellen M'G., eight months old. The child is nursed at the breast, and I cannot learn that it has had other food, though this is very probably the case. For the last two weeks, it has been suffering from entero-colitis, which the castor-oil emul-

sion before mentioned has failed to arrest. The passages are now intensely green, but there is no vomiting. The infant being much exhausted, I told the mother to give it a little brandy from time to time, and ordered two bottles of kumyss for it. It was also to be allowed to take breast-milk in small quantities; but of course, nothing else.

August 1st.—The mother not having reported at the dispensary, as requested, I called at the house, and ascertained that the color of the discharges was at once changed by the remedy, and that they soon became of normal consistency and frequency. Recently, however, there has been a return of the diarrhœa, and consequently I ordered more kumyss.

September 9th.—Heard nothing more of the case until to-day, when the infant was brought to the dispensary, for a slight attack of bronchitis. The mother states that the diarrhœa was a second time at once checked by the kumyss, and that there has been no return since.

CASE IV *August 8th.*—James G., aged two years. Has had entero-colitis the greater part of the summer. Last evening the mother became alarmed about him, as the bowels became a great deal worse than before, and he was also attacked with vomiting. The passages are of a bright green color. Ordered three bottles of kumyss.

10th.—The mother says she could not get the child to take kumyss, and that he is no better. Accordingly I prescribed other remedies.

24th.—The case was not reported until to-day, when the mother says that after she was at the dispensary the last time she succeeded in getting the child to take the kumyss very well, and that by the time the third bottle was used up, he was so much improved in

every way, that she did not think it worth while to bring him back any more. He now looks very well, indeed, for a child that has had diarrhœal trouble for so long.

The following case is reported to me by Dr. Brush : A child, eight months old, of scrofulous diathesis, which was bottle-fed and suffering from malnutrition, was affected with summer diarrhœa. The passages from the bowels averaged five per diem, the discharges being light-colored, soft and extremely offensive in character. It was given kumyss, all other food being excluded, and the frequency of the passages was reduced to two a day, while they became thick, white and free from odor. It was given the kumyss for some days, after which its ordinary diet of diluted cow's milk was resumed, and consequently there was no further trouble.

I might quote other cases, but these, I think will be sufficient to show that kumyss has a most prompt and admirable effect upon some forms, at least, of the summer intestinal disorders of infancy and young children ; and although more experience is needed in its use, I cannot but feel that in it a most valuable agent has been added to our means of successfully contending with such disease, and that its more general employment in this class of affections will be followed by the most happy results. As it acts both as a food and as a remedy for the disorder present, its advantages are obvious ; and I regard the small amount of alcohol which it contains, in a state that can be immediately appropriated by the system, as of very considerable service in promoting absorption and secretion, in stimulating nervous action, and in lowering the temperature of the body. Of course, in every instance the most careful attention is to be paid to the hygienic condition and surroundings of the child ; and

unless this is done, no remedy whatever is likely to be of much service.

In reply to a note of mine, asking for some expression of his views in regard to the action of kumyss in the diarrhœa of children, Dr. Brush has addressed to me a very interesting communication, in the course of which he writes as follows:

In the first place, it is to me a fact conclusively demonstrated, that all diarrhœas of infants commencing with green discharges are due to the non-digestion of sugar; and, secondly, I believe that the larger percentage of intestinal disturbances in bottle fed children is due to the un-fixed condition of the casein; that is, the casein is in a fit state to undergo rapid change, notably, the hard coagulation due to lactic fermentation, followed by putrefaction. For instance, city milk, when delivered to the consumer, is ordinarily from thirty-six to forty-eight hours old, by which time lactic fermentation has always commenced. When milk of the above age does not affect the litmus, its acidity has been neutralized by the addition of lime or soda, and this neutralization, by the way, increases the action of the lactic ferment. When the milk reaches the stomach, where the temperature is increased to above 95 deg. Fabr., the most favorable degree for lactic fermentation, the latter becomes very rapidly complete, and the hard, indigestible coagulation takes place. After lactic fermentation is complete, putrefactive fermentation immediately follows. This is the condition when vomiting occurs, and any of the casein which reaches the intestinal tract acts as an irritant, on account of the putrefaction that is taking place.

Now, the beneficial effects of kumyss in diarrhœal diseases is accounted for, first, by the total absence of milk-sugar which characterizes it, this principal having been broken up into alcohol, which answers the double purpose of being a hydro-carbonaceous food and of promoting absorption; secondly, by the fixed condition of the casein. In kumyss we find this principle finely subdivided, ready for absorption, incapable of being coagulated, or, under ordinary circumstances, of undergoing putrefaction. Last summer, I took a specimen of kumyss and the same quantity of milk from which the kumyss was prepared, and placed them both in open vessels in a window, the weather being very warm. When after a few days I examined them, I found the milk alive with maggots, about an inch in length, and giving off a very offensive odor, while the kumyss was practically unchanged, there being no evidence of life about it, the taste being that of ordinary kumyss, and the odor simply that of new cheese.

In regard to the action of kumyss in cholera infant-

um, I have had no experience unless Case IV. is to be regarded of this nature (the attack supervening upon entero-colitis of long standing); but I should expect to obtain excellent results from it in any case in which its administration was not delayed too long. In confirmation of this opinion, I am happy to give the following report of a case which Dr. Brush has kindly sent me :

As to the action of kumyss in cholera infantum, I will cite one case, which is illustrative of the care necessary in its administration, as well as the benefit derived from it when it is properly exhibited. The child was five months old, bottle-fed and suffering from cholera infantum, third day. On a Saturday, my friend Dr. Campbell sent the father to me, with a note asking me to give him some kumyss, with directions as to its use. Accordingly, I did so, making the directions as explicit as possible. In the evening, however, the father returned, saying that the child could not retain the kumyss; so having the doctor's permission to do so, I accompanied him to the house, to see about the matter myself. I found the infant almost in a state of collapse, having had twenty-four passages during the day, up to 5 P. M., and constant vomiting in addition. The parents not following the particular directions given, had used their own discretion in administering the kumyss; that is, having tasted the liquid upon opening the bottle, and thinking it too sour and cold, they had actually sweetened and warmed it. As might have been expected, this had increased the nausea and vomiting to such an extent, that it was very difficult to give it the kumyss in a proper manner. At first, the simple approaching of the child's mouth with the spoon excited emesis, but with perseverance I succeeded in getting down two teaspoonfuls, which were retained. In half an hour, two more teaspoonfuls were given, and these were also retained, after which we continued to administer the same quantity every half-hour, until four ounces had been taken. From the first dose there was no more vomiting, and I then took my departure, after directing the parents to follow out the same plan of treatment. When I visited the child on Sunday morning, I found that although it had not improved very much in appearance, there had been a marked abatement of the symptoms, the diarrhoea being very much better, while there had been no vomiting whatever since I had been there the previous evening. During that day it took a bottle and a half of kumyss, and did not have a single passage until night. After that it slept well, and rapidly increased in strength, taking three bottles (pints) in the course of every twenty-four hours. On Tuesday and Wednesday there was no movement of the bowels at all; but subsequently the child always had one or two passages a day. The next Saturday we considered

it well enough to go back to its ordinary food of cow's milk, and it has continued to do well up to the present time.

Kumyss is recommended not only in the intestinal disorders of children, but also in all diseases characterized by defective nutrition; and the following rules should be observed in its administration:

In giving kumyss to children under one year of age, always empty the contents of the bottle into a pitcher, and from that into another, and so continue to pour it back and forth until all, or nearly all, the gas is eliminated—say for about ten minutes. Then take what is necessary for one dose, and pour the remainder back into the bottle, cork and keep in temperature between 50 deg. and 60 deg. Fahr. By thus always corking and placing the bottle in a cool place after taking the dose from it, it is possible to keep it for twelve hours.

It should never be sweetened, or diluted under any circumstances whatever, nor should it ever be given less than two hours after the administration of any other form of milk.

Children from three weeks to three months of age, suffering from any form of defective nutrition, and children over three months, suffering from diarrhœal disease, should be given about one teaspoonful every hour for the first twenty-four hours; and it is usually best to give these small doses from a spoon. Children over three months of age, not suffering from diarrhœal disease, can take kumyss from a nursing bottle; and about half the quantity which they have been accustomed to take of other food will be sufficient. Ordinarily, children need it for one or two weeks at a time, and when it is discontinued no food should be given until two hours after the last dose of kumyss.

In conclusion, I will say by way of caution, that on account of the numerous formulæ for kumyss, which are now being published, with directions for its pre-

paration, in which the casein is not modified and the milk-sugar not destroyed. Dr. Brush proposes the following simple tests for true Kumyss: to ascertain if the casein is coagulable, add dilute hydrochloric acid, and if this precipitates the casein, the mixture has not been properly prepared.

To ascertain if the milk-sugar has been destroyed, boil and fill a test-tube with the liquid; then add a little yeast and invert the tube in a saucer of water, as in the fermentation test for sugar in urine, when any fermentation taking place gives evidence that the mixture has not been properly prepared.

—*New York Medical Journal.*

Kumyss in the Treatment of Cholera Infantum.

By ARCH. M. CAMPBELL, A.M., M.D., Mt. Vernon, N. Y.

To those who have the care of a large number of artificially fed children, the approach of the season when diarrhœal disorders are most prevalent and fatal is always looked forward to with anxiety, and whatever new food is offered, that promises to be worthy of a trial, is eagerly seized and used with the hope that sufficient good may be found in it to help tide us over in some trying case.

In the summer of 1878, Dr. Brush placed at my disposal as much of his preparation of kumyss as I might need for trial. The success met with in its use that season was such that I formed a decidedly favorable opinion of it, and have prescribed it freely during the past two summers. In a severe case of choleraic diarrhœa we derive but little aid from medication, the primary cause of the disorder being the food which was put into the child's stomach; for these cases occur almost exclusively among fed children. Our aim is chiefly directed towards finding something upon which the infant can be nourished, and which will not increase the trouble already existing. In kumyss we have a food which children with high temperature not only take kindly, but crave, its slightly acid taste being grateful to their parched tongues. It is an absolutely non-putrefactive food, is free from sugar, and it is rarely rejected by even the most irritable stomach. These are qualities that we seek for, and my success

with this preparation has been such that I feel justified in relating the following cases.

CASE I.—Peter Van Clair, orphan, 9 1-2 months, bottle fed from birth. July 12th to 17th. 1879, had diarrhœa: improved under ordinary treatment until mid-day of the 17th, when he commenced vomiting and purging; had from two to three passages every hour until seen at 10 p.m. Extremities cold and clammy, head hot, child rolled it from side to side, burrowing it in the pillow and uttering sharp and piercing cries; T, 105 deg. During the next half-hour had three passages, of a clear rice-water character. Put child in a hot bath, and when taken out well rubbed. Gave Squibbs' tinc. opium, 2 drops, with 15 grs. subnit. bismuth, followed by 1-2 oz. whiskey every 5 minutes, until 4 oz. of whiskey had been taken. A reaction was established, became warm; vomited several times, did not rest. At 12 p.m. gave kumyss, a teaspoonful every half-hour for the first two or three hours, then every fifteen minutes, so long as he was awake.

18th, 8 A.M.—Restless night, slept but a few minutes; vomiting ceased: passages about once an hour, of rotten egg appearance; T., 104 deg.; pulse could not be counted. Ordered dram ss. kumyss every half-hour; child to be kept out of doors all day. 8 p.m.—Passage once an hour, of more consistency, and less feculent; no vomiting; T., 103 deg.

19th, 8 A.M.—Restless night, had four or five passages; gave potas. bromid. grs. ij. every hour until quiet; after taking four doses slept for several hours. 7 p.m.—Only had three passages during the day.

20th.—Had a comfortable night, only one passage.

21st.—Returned to cow's milk, with barley-water

and lime water, kumyss having been continued exclusively up to this time.

This case for first five days of illness had received the ordinary treatment, commencing with syr. rhei, followed with mist. cretæ and astringents, potas. bromid., etc. The food was regulated by use of condensed milk instead of fresh, barley-water, toast-water, imperial granum, etc., without any satisfactory result.

CASE II.—C. McDonald, 7 months, foundling, bottle fed. Had diarrhœa for several days preceding August 5th, 1879, on which day I was called to see her at about 4 A.M. During the night the child had vomited everything given to her; had passages from bowels every few minutes, which, for the last hour or two, were clear and odorless; T., 104 1-2 deg.; was restless; wanted drink, but would vomit whatever was given. Gave about 10 grs. subnitrate of bismuth. At 7 A.M. commenced giving kumyss in half teaspoonful doses every ten minutes. After an hour gave tablespoonful doses; none of it was vomited. Towards mid-day she slept for nearly an hour, after taking three doses of potas. bromid., with tinct. opii. Passages began to diminish in frequency, and were more consistent. Kumyss was now given at the rate of a tablespoonful every half-hour. By evening she took about four tablespoonfuls at each feeding.

6th.—Child had three passages during the night; slept considerably. At noon returned to cow's milk, diluted with barley-water and lime-water added, without further trouble.

CASE III.—W. W., 5 1-4 months; bottle fed; cow's milk, barley-water, and lime-water, and imperial granum being used. Was taken ill with vomiting and diarrhœa at midnight July 14th, 1880. Saw him a

short time afterwards; passages continued at intervals of an hour until morning.

15/h, 6 A.M.—T., 104 deg.; stomach very irritable, everything swallowed producing violent emesis; intensely thirsty. Bromide potash was freely given, but it failed to quiet restlessness; passages profuse and offensive, consisting of a yellowish water, becoming less offensive and clearer later in the day. 5 P.M.—Rice-water discharges about every fifteen minutes; crying for drink continuously, fontanel sunken; extremities cold; head hot; T., 104 1-2 deg.; body clammy. Gave brandy and Squibbs' tinct. opii mixed in barley-water, giving a few drops only at the time. About 6 P.M. commenced giving kumyss; this was given in half teaspoonful doses every ten minutes; child took it readily, and retained it. All vomiting ceased after giving the kumyss. No medicine was subsequently used except tinct. opium, brandy, and barley-water. The passages began to diminish in number each day. On the second day two bottles (pints) were consumed; on the third and fourth days, three bottles a day were taken. After the fourth day, granum made with barley-water was occasionally given. The child made a perfect recovery.

CASE IV.—Annie Martin, 3 1-2 months. orphan, bottle fed; weight 6 lbs. For a week preceding July 18th 1880, she had diarrhœa; at this date would not retain any food on her stomach; was wasting away. Was immediately put on kumyss exclusively; at first two pint bottles a day, then three daily. At the end of two weeks her weight increased to 9 lbs.; returned to cow's milk, and has since done well.

These four cases are taken as types of a number to whom kumyss was administered. In the first, second, and third it was not given until after the discharges

had assumed a serous character. The fourth case illustrates the rapid gain in weight which this food is capable of effecting. All but the third case were in not the best hygienic surroundings.

The first case had been under treatment for diarrhœa for five days, when the sudden and profound change took place which caused the condition of collapse; the 15 gr. dose of subnitrate of bismuth acted as a temporary sedative to the stomach, and enabled the opium and whiskey to be retained and absorbed; but this would only have been a temporary gain if we had not had at hand some non-putrefactive food, which the child could retain, and by which he could be nourished.

In the second case, the improvement was the most rapid and marked of any. There had been the preliminary diarrhœa, followed by the sudden change to that of a choleraic form; the only medicine used was a single 10 gr. dose of bismuth, followed later with potass. bromide and tinct. opii, the latter being used for its stimulating properties.

The third case was more acute in its character, but he sank more rapidly than either of the others, being a child that lacked the *vis naturæ*.

In administering kumyss, the gas should first be expelled by pouring the contents of a bottle from one pitcher to another. Begin with small doses, gradually increasing the amount, and, when the stomach will bear it, barley-water may be used to quench thirst. Before returning to a full milk diet, it is better for a few days to use one of the prepared foods. While I do not claim that kumyss is a panacea for every case of choleraic diarrhœa, I can say we have in it a valuable aid with which to treat this most formidable complaint.

It is not my intention to convey the impression that

I administer kumyss for its curative properties as a medicine, but regard it as a food. Its use in the early stage of a choleraic diarrhœa will aid in arresting the disease by supplying a nourishment which the infant can retain, and which will readily be absorbed. It works best in cases where the temperature is above normal, from the fact that it must be given cold. Of course many children to whom it has been given have died, but I can say for it that it has never failed me in any case of cholera infantum, except some in whom well-marked brain symptoms had already existed before it was administered, to such a degree as to preclude the possibility of a recovery. Even in these cases it is an advantage, for we are giving a food which will not be vomited, and which will satisfy thirst. I know of but one case, provided it had been given according to directions, where a child would not retain kumyss in its stomach. This was a bottle fed child, with simple diarrhœa of indigestion. The temperature was one degree below normal, and it required a warm rather than cold food. Nestle's food agreed admirably with this child for about two weeks, when diarrhœa again set in, and it died of general atrophy.—*American Journal of Obstetrics.*

Kumyss as a Regular Diet.

If it is desirable, or necessary, to keep an infant on kumyss for any length of time, after recovery from an acute attack of intestinal trouble, or when other articles of diet disagree, all that is requisite, after eliminating the gas, as directed by Dr. Porter, is to pour into an old-fashioned nursing bottle the amount of kumyss required for the meal. Then immerse the nursing-bottle in hot water, removing it every few seconds, placing the finger over the mouth of the bottle (to prevent spilling), and shaking it vigorously. Continue immersing and shaking until the kumyss is warm enough. The rubber nipple may then be pulled over the mouth of the bottle and the babe fed. If it were not for the expense, I would recommend kumyss as a diet for all infants artificially fed, as it is the nearest approach to human milk of any preparation now made, or possible to be made, and agrees perfectly with the babies as a regular diet. As a scientific confirmation of the above statement, I reproduce part of an article which I contributed to the *New York Medical Journal* for September, 1879, entitled "Observations on the Digestion of Milk."

"Milk may be divided into two distinct varieties, according as it is the product of cud-chewing or non-cud-chewing animals. This is a distinction to which I think sufficient attention has not been previously drawn. The former class—that of the cud-chewers, to which of course the milk of the cow belongs—contains

a variety of caseine which coagulates into a hard mass under the action of the digestive ferment, or during the lactic ferment. This coagulation takes place in the natural process of digestion with the calf.

“ During the summer I had a calf which I tied in a stable out of reach of any food, and gave it nothing but fresh milk from its mother ; half an hour after the ingesta of milk I always found it chewing the cud. After diligent inquiry I have been informed that the same takes place with the sheep and the goat, the other domestic ruminant animals. We may from these facts explain the difficulty experienced by the human stomach in digesting the milk of ruminating animals.

“ The other variety of milk—that given by the non-cud-chewing animals, to which the human, equine, and canine races belong—does not, under the action of rennet or acids, coagulate into the hard mass we find in the cow’s milk, but coagulates into small granular or flocculent masses, easily diffusible.

“ This fact explains very simply the advantages of *kumyss* prepared from cow’s milk over the milk itself, in the artificial feeding of children. In *kumyss* the caseine is—if we may be allowed so to express it—practically regurgitated and chewed; *i. e.*, having been coagulated it is resubdivided, and incapable of being coagulated under any acid or ferment.”

E. F. BRUSH. M. D.

Mount Vernon, N. Y.



The success Dr. E. F. BRUSH'S KUMYSS obtained, has induced many imitations. It is, therefore advisable, when ordering Kumyss from others than ourselves, to specify "Dr. E. F. BRUSH'S KUMYSS."

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